

described may comprise a CDR L2 that is selected from the group consisting of WAS (SEQ ID NO:36) and FAS (SEQ ID NO:37).

[0016] In another non-limiting example, the isolated or purified antibody or fragment thereof as described above may comprise a CDR L3 that is selected from the group consisting of QQYYTYXRT (SEQ ID NO:10) where X is P or no amino acid and QQYYSIPLT (SEQ ID NO:11).

[0017] In yet another non-limiting example, the isolated or purified antibody or fragment thereof as described above may comprise a CDR H1 selected from the group consisting of GYSITSDYY (SEQ ID NO:12) and GYTFTDYY (SEQ ID NO:13).

[0018] In a more specific example, the isolated or purified antibody or fragment thereof may comprise a sequence that may be selected from the group consisting of:

[0019] a) a light chain comprising CDR L1 of sequence QSLLNSRNQKNH (SEQ ID NO:8), CDR L2 of sequence WAS (SEQ ID NO:36), and CDR L3 of sequence QQYYTYRT (SEQ ID NO:14); and a heavy chain comprising CDR H1 of sequence GYSITSDYY (SEQ ID NO:12), CDR H2 of sequence IGYDGSK (SEQ ID NO:15), and CDR H3 of sequence TRDRAN-WDDYFDY (SEQ ID NO:6);

[0020] b) a light chain comprising CDR L1 of sequence QSLLNSRNQKNH (SEQ ID NO:8), CDR L2 of sequence WAS (SEQ ID NO:36), and CDR L3 of sequence QQYYTYRT (SEQ ID NO:14); and a heavy chain comprising CDR H1 of sequence GYSITSDYY (SEQ ID NO:12), CDR H2 of sequence IGYDGTK (SEQ ID NO:16), and CDR H3 of sequence TRDRAN-WDDYFDY (SEQ ID NO:6); and

[0021] c) a light chain comprising CDR L1 of sequence QSLLNSDTQKNF (SEQ ID NO:9), CDR L2 of sequence FAS (SEQ ID NO:37), CDRL3 of sequence QQYYSIPLT (SEQ ID NO:11); and a heavy chain comprising CDR H1 of sequence GYTFTDYY (SEQ ID NO:13), CDR H2 of sequence IYPGNNGHT (SEQ ID NO:5), and CDR H3 of sequence AYDLFNY (SEQ ID NO:7).

[0022] More specifically, the isolated or purified antibody or fragment thereof may comprise a variable light (VL) domain having a sequence of:

[0023] DIVMX₁QSPSSLAX₂SVGX₃KVTMSCKSSQ SLLNSX₄X₅QKNX₆LAWYQQKPGQS PKX₇LX₈YX₉ASTX₁₀ESGVPDRFX₁₁GX₁₂GSGTD FTLTIX₁₃SVX₁₄AEDLAX₁₅YX₁₆C QQYYX₁₇X₁₈X₁₉X₂₀TFGX₂₁GTKLEIK (SEQ ID NO:17), where X₁=S or T, X₂=V or M, X₃=E or O, X₄=R or D, X₅=N or T, X₆=H or F, X₇=L or I, X₈=I or V, X₉=W or F, X₁₀=R or K, X₁₁=S or I, X₁₂=D or S, X₁₃=S or T, X₁₄=K or Q, X₁₅=V or D, X₁₆=Y or F, X₁₇=T or S, X₁₈=Y or I, X₁₉=P or no amino acid, X₂₀=R or L, X₂₁=G or A.

[0024] In an even more specific example, the variable light (VL) domain may comprise a sequence selected from the group consisting of:

[0025] DIVMSQSPSSLAVSVGEKVTM-SCKSSQSLNSRNQKNHLAWYQQKPGQSPKLIYWASTRESGVPDFRX₁GDGSQTDFTLTISSVKAEDLAVYYCQQYYRTFGG GTKLEIK (SEQ ID NO:18) where X₁=S or T; DIVMTQSPSSLAMS-VGQKVMSCKSSQSLNSDTQKNFLAWYQQK-PGQSPKIL VYFASTKESGVPDFRFIGSGSGTD-

FTLTITSVQAEDLADYFCQQYYSIPLTFGAGTKLELK (SEQ ID NO:19); and

[0026] a sequence substantially identical thereto.

[0027] In the isolated or purified antibody or fragment as described above, the variable heavy (VH) domain may comprise a sequence selected from the group consisting of:

[0028] DVQLQESGPGLVKPSQSLSTCSVTGYSITSQYWNWIRQFPGNKLEWM YDGX₁KNYNPSLKNRISITRDTSKNQFFLKLNSVTTDDATYYCTRDRANWDDY FDYWGQGTTLT-VSS (SEQ ID NO:20) where X₁=S or T; QIQLQQSGPELVKPGAPVKISCKASGYTFTDYYIHWNQR-PGQGLEWIGYIYPG NGHTVYNQKFKVRAITLTADNPSSSTAYLQLNSLT-SEDSGVYFCAYDLFNYWGQ GTLTVSA (SEQ ID NO:21); and

[0029] a sequence substantially identical thereto.

[0030] In specific, non-limiting examples, the isolated or purified antibody or fragment thereof may comprise:

[0031] a) a variable light (V_L) domain of sequence:

(SEQ ID NO: 22)
DIVMSQSPSSLAVSVGEKVTMSCKSSQSLNSRNQKNHLAWYQQKPGQS
PKLLIYWASTRESGVPDFRGDGSQTDFTLTISSVKAEDLAVYYCQQYY
TYRTFGGGTKLEIK;

and variable heavy (V_H) domain of sequence:

(SEQ ID NO: 24)
DVQLQESGPGLVKPSQSLSTCSVTGYSITSQYWNWIRQFPGNKLEWM
AYIGYDGSKNYNPSLKNRISITRDTSKNQFFLKLNSVTTDDATYYCTR
DRANWDDYFDYWGQGTTLT-VSS;

or

[0032] b) a variable light (V_L) domain of sequence:

(SEQ ID NO: 23)
DIVMSQSPSSLAVSVGEKVTMSCKSSQSLNSRNQKNHLAWYQQKPGQS
PKLLIYWASTRESGVPDFRGDGSQTDFTLTISSVKAEDLAVYYCQQYY
TYXRTFGGGTKLEIK;

and variable heavy (V_H) domain of sequence:

(SEQ ID NO: 25)
DVQLQESGPGLVKPSQSLSTCSVTGYSITSQYWNWIRQFPGNKLEWM
AYIGYDGSKNYNPSLKNRISITRDTSKNQFFLKLNSVTTDDATYYCTR
DRANWDDYFDYWGQGTTLT-VSS;

or

[0033] c) a variable light (V_L) domain of sequence:

(SEQ ID NO: 19)
DIVMTQSPSSLAMS-VGQKVMSCKSSQSLNSDTQKNFLAWYQQK-PGQSPKIL VYFASTKESGVPDFRFIGSGSGTD-SIPLTFGAGTKLELK;